Postpartum Depression Among Women Utilizing Texas Medicaid

As Required by the

2018-19 General Appropriations Act, Senate Bill 1, 85th Legislature, Regular Session, 2017

(Article II HHSC, Rider 85)

Texas Health and Human Services Commission

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Executive Summary

The 2018-19 General Appropriations Act, Senate Bill 1, 85th Legislature, Regular Session, 2017 (Article II, Health and Human Services Commission (HHSC), Rider 85) directed HHSC to report on the screening and treatment of postpartum depression (PPD).

PPD is a common and potentially serious condition typically diagnosed during or after pregnancy. Symptoms include tearfulness, exhaustion, anxiety, difficulty sleeping, difficulty performing daily activities, and feelings of guilt. Relationships among partners may be compromised by PPD and mothers may develop behaviors that negatively impact their parenting abilities and compromise the mother-child bond. In extreme situations, mothers suffering from PPD may experience thoughts of suicide or infanticide.

These conditions can adversely affect the child's social and cognitive development, carrying negative implications for motor development, learning skills, and child temperament. Children of mothers with PPD and related conditions are at greater risk of abuse or neglect, at greater risk of failure to thrive, and are more likely to be hospitalized for preventable health issues.

While PPD symptoms occur up to one year after delivery, related depressive diagnoses are often apparent during pregnancy. Pregnancy-related depression (PRD) refers to depressive symptoms that occur at any point during the pregnancy or in the months following delivery. Examining PRD as a broader continuum of pregnancy related depressive disorders better reflects that PPD symptoms can originate prior to delivery.

This report examines the frequency of PRD among women with a Medicaid-paid delivery, the frequency of PRD screening by Medicaid and Women's Health providers, the utilization of services and onset of treatment for PRD, and Medicaid costs during fiscal year 2016.

PRD was diagnosed in 10 percent (21,321 out of 212,289) of all women with Medicaid-paid births in fiscal year 2016. This rate is about 31 percent lower than the Texas pregnancy risk assessment monitoring system (PRAMS) estimate of 14.4 for 2014-2016 and about 22 percent lower than the national aggregated PRAMS

estimate of 12.8. This may be partially explained by differences between provider reported PRD diagnoses on Medicaid claims and encounters versus depressive symptoms derived from PRAMS self-reported survey data.

The results of this analysis reflect how PRD symptoms become apparent throughout pregnancy and beyond rather than solely after delivery:

- In fiscal year 2016, over half of women with Medicaid-paid deliveries diagnosed with PRD had a diagnosis that occurred before delivery;
- Almost half (48.3 percent) of the 7,269 women with a Medicaid paid delivery seeking care for PRD had at least one visit with a physician or other non-institutional Medicaid provider prior to delivery; and
- Over one fourth (28.7 percent) of women who used local mental health authority (LMHA) services for PRD were treated both during pregnancy and after delivery, and 16.2 percent were only treated during pregnancy.

Postpartum depression is typically treated with psychotherapy, antidepressants or both. Many women prefer to not use antidepressants while pregnant or breastfeeding to avoid fetal or infant exposure. However, studies have shown that the risks of not treating or under-treating depression may outweigh the risks of fetal and infant exposure to antidepressants in certain cases, including those that involve women with persistent severe symptoms discontinuing a medication.

- Almost half (48.6 percent) of the women diagnosed with PRD had an antidepressant prescription filled prior to, during, or after pregnancy.
- About one-third (32 percent) of women with PRD treated with antidepressants began using them during pregnancy.
- The rate of filled antidepressant prescriptions declined substantially, from 240.7 filled per 1,000 months enrolled before pregnancy to 74.3 per 1,000 during pregnancy. The rate of prescriptions filled postpartum increased to approximately 85 percent of the pre-pregnancy rate (205.7 per 1,000).

Over $12 million (All Funds) were spent annually by Medicaid in fiscal year 2016 for depression-related clinical and prescription drug services during pregnancy and up to one year after delivery.

- Average statewide per capita costs were $1,014 for acute care services and $71 for filled prescriptions.

- Per capita costs varied by region with the highest average costs in far west Texas and the lower Rio Grande valley.

In order to increase awareness, education, and continuity of care for women with PRD, HHSC and the Department of State Health Services (DSHS) launched several initiatives in 2016. One of these initiatives was that as of July 1, 2016, eligible women whose Medicaid for Pregnant Women (MPW) coverage ends are automatically enrolled in the Healthy Texas Women (HTW) program. The HTW auto-enrollment process closes the gap in coverage for many vulnerable women and preserves their access to necessary services.

- In fiscal year 2016, prior to this policy change, fewer than 20 percent of women who were enrolled in Medicaid for Pregnant Women at the time of delivery had uninterrupted coverage beyond three months after delivery.

- The July 2016 policy change extended women's enrollment by providing services through HTW. Immediately following the policy change, the number of women with uninterrupted coverage for services that include screening and pharmaceutical treatment for postpartum depression more than doubled to approximately 45 percent.

Additionally, effective July, 1 2018, PPD screening may be performed in addition to a Texas Health Steps (THSteps) visit for infants under the age of 1. This policy change provides additional opportunities for PPD screening beyond what is covered through MPW.

1. Introduction

The 2018-19 General Appropriations Act, Senate Bill 1, 85th Legislature, Regular Session, 2017 (Article II, Health and Human Services Commission (HHSC), Rider 85) directs HHSC to report on postpartum depression:

The Health and Human Services Commission (HHSC) shall submit a report on the screening and treatment of postpartum depression, and include, wherever possible, claims data and codes for all postpartum depression screenings and any other reported clinical data relevant to postpartum depression in public health programs including the Medicaid program, local mental health authorities, and women's health programs. No later than February 1, 2019, HHSC shall submit a report to the Legislative Budget Board, the Texas Maternal Mortality and Morbidity Task Force within the Department of State Health Services or its successor agency, and each House and Senate committee with legislative authority over the operation or financing of public health programs.

Previous research suggests that postpartum depression is a condition that often begins during pregnancy (see Section 2: Background). For that reason, the current report examines all pregnancy-related depression (PRD), including postpartum depression and depression diagnosed prior to delivery.

To achieve the goals of Rider 85, this report examines the following:

- frequency of PRD diagnoses among women in Medicaid;
- pregnancy-related depression and identification;
- utilization of services and onset of treatment for PRD; and
- Medicaid costs of PRD

2. Background

2.1 Postpartum Depression

Postpartum depression (PPD), also known as perinatal or peripartum depression, is a common and potentially serious condition typically diagnosed during or after pregnancy. According to the American Congress of Obstetrics and Gynecologists (ACOG):

"Perinatal depression, which includes major and minor depressive episodes that occur during pregnancy or in the first 12 months after delivery, is one of the most common medical complications during pregnancy and the postpartum period, affecting one in seven women." [1]

Underlying causes of PPD include:

- changes in hormone levels;
- history of depression;
- emotional factors;
- fatigue; and
- lifestyle factors[2]

PPD should not be confused with "baby blues" which is a temporary state that usually occurs within a few days of a baby's birth and can last up to two weeks.[3] PPD symptoms are similar, but last longer and are more severe. Common symptoms include tearfulness, exhaustion, anxiety, difficulty sleeping, difficulty performing daily activities, and feelings of guilt.[4]

The impact of PPD, and related conditions, can be far reaching. Relationships among partners may be compromised by PPD.[5] Numerous studies demonstrate women suffering from PPD develop behaviors that negatively impact their parenting abilities and compromise the mother-child bond.[6,7] This in turn creates conditions which adversely affect their child's social and cognitive development, may exacerbate issues of difficult child temperament, and decrease motor development and learning skills.[8] In extreme situations, mothers suffering from PPD may experience thoughts of suicide or infanticide.[9]

Women exhibiting symptoms during pregnancy may suffer more severe postpartum depression relative to individuals diagnosed after delivery and are more likely to exhibit symptoms such as suicidal thoughts, panic, and frequent crying.[10]

The consequences of behavioral conditions, including PPD, may ultimately influence the health and well-being of the child. Children of mothers with PPD and related conditions are at greater risk of abuse or neglect, at greater risk of failure to thrive, and are more likely to be hospitalized for preventable health issues such as untreated asthma.[9]

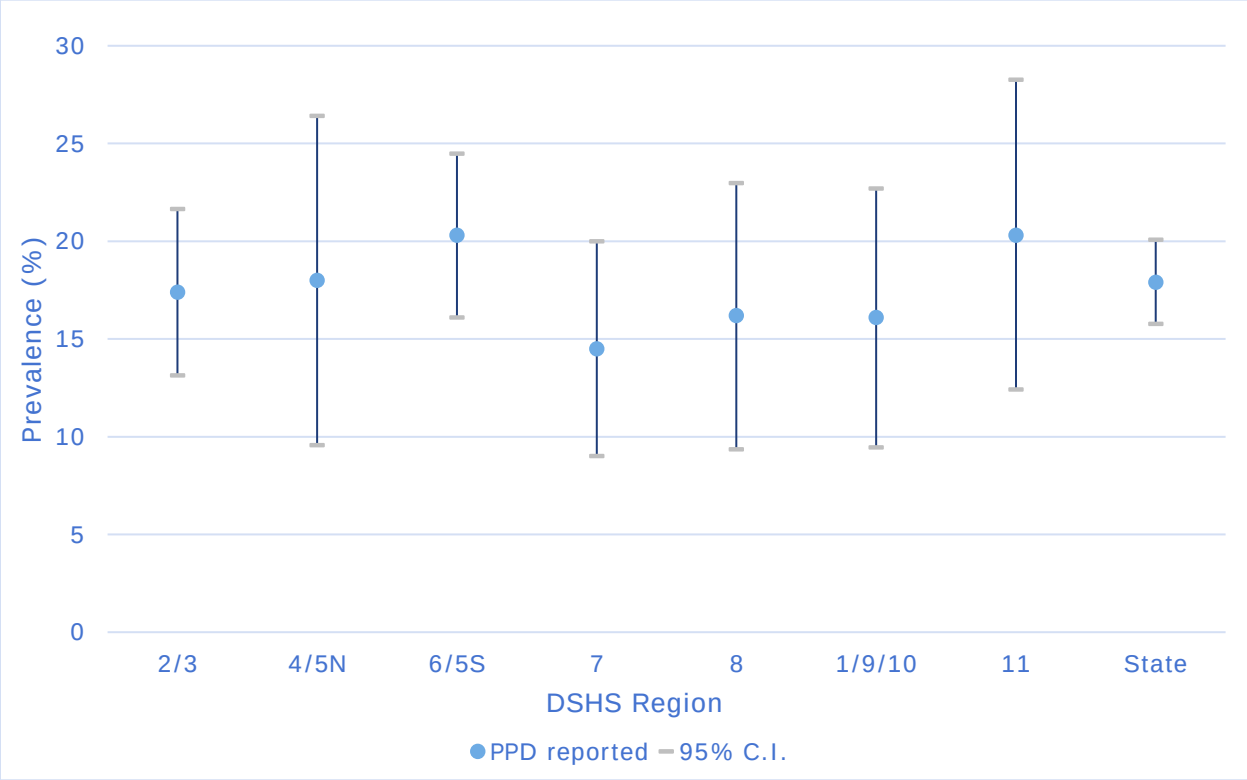
Postpartum depression is typically treated with psychotherapy, antidepressants or both. For mild to moderate depression, psychotherapy alone is often the first treatment considered. For moderate to severe depression, a combination of psychotherapy and antidepressants is considered the "gold standard". The most commonly prescribed antidepressants are selective serotonin reuptake inhibitors (SSRIs) due to fewer side effects and lower risk of overdose toxicity. Because certain types of depression can often be treated without medication, many women prefer to not use antidepressants while pregnant or breastfeeding to avoid fetal or infant exposure. However, in cases that involve women with persistent severe symptoms discontinuing a medication, studies have shown that the risks of not treating or under-treating depression may outweigh the risks of fetal and infant exposure to antidepressants.[11,12,13]

2.2 Postpartum Depression Trends

According to aggregated 2015 CDC Pregnancy Risk Assessment Monitoring System (PRAMS) data from 34 participating states, an estimated 12.8 percent of new mothers self-reported symptoms of postpartum depression.[14] Based on combined 2014-2016 data, PRAMS estimated that 14.4 percent of all Texas women (residents who gave birth to a live infant) reported symptoms of postpartum depression within six months after delivery (see Appendix C). Statewide, unmarried women had a significantly higher rate (18.6 percent) of symptoms than their married counterparts (11.6 percent) and younger women reported significantly higher rates of symptoms than older women. Higher rates of symptoms were reported for women 19 years old and younger (19.8 percent) and women 20-24 years old (17.0 percent). Lower rates of symptoms were reported for women 25-34 years old (13.5 percent) and women 35 years and older (11.1 percent).[15]

Combined CY 2014-2016 PRAMS data illustrate variation in prevalence by DSHS Region among women covered by Medicaid, (Figure 1), though the differences were not statistically significant. Central Texas (Region 7) had the lowest prevalence (14.5 percent) and both east Texas (Region 6/5S) and the lower Rio Grande valley (Region 11) were highest (20.3 percent each).

Figure 1. PRAMS prevalence of self-reported postpartum depressive symptoms among women with Medicaid by DSHS region, CY 2014-2016[a]



[a] Weighted frequencies and 95% confidence intervals are based on combined CY 2014-2016 data.
Source: Pregnancy Risk Assessment Monitoring System (PRAMS), 2014-2016 data. Prepared by Maternal & Child Health Epidemiology, DSHS.

In October of 2016, HHSC published "Postpartum Depression among Women Utilizing Texas Medicaid" as required by the 2016-17 General Appropriations Act, House Bill 1, 84th Legislature, Regular Session, 2015 (Article II, HHSC, Rider 54). The Rider 54 report identified both women with PPD and women with other depression-related diagnosed mental disorders (DMD) that occurred during or after pregnancy. DMD diagnoses consisted predominately of bipolar and depressive disorders complicating childbirth (see Appendix A: Diagnosis Codes for PPD and DMD). Among Medicaid clients, PPD appeared to be under-identified using administrative data. PPD diagnoses were reported in 1.7 percent (3,533 out of 212,809) of all Medicaid-paid births during fiscal year 2014. This rate was 90

percent lower than the PRAMS PPD estimate for women in Texas Medicaid (16.9 percent) and approximately 85 percent lower than the national average of 15 percent.

While combining the diagnoses of women with PPD and other DMD in fiscal year 2014 increased identified depression among pregnant and post-partum women to 9.3 percent, the combined rate remained almost 45 percent lower than the 16.9 percent PRAMS estimate. One explanation for this discrepancy is that PRAMS data are retrospective and self-reported, while Medicaid rates are based on medically diagnosed conditions reported from claims and encounters data. Another factor is that the time frame for which PRAMS data are collected (between 2-6 months after delivery) is generally beyond the length of time a woman remains enrolled in Medicaid. The Medicaid based enumeration of pregnancy-related depression is affected by the length of the mothers' postpartum enrollment period and may be underreported if there are gaps in coverage or if coverage ends two months after delivery.

2.3 Postpartum versus Pregnancy Related Depression

Although previous diagnostic criteria focused on depressive episodes after delivery, the Diagnostic and Statistical Manual for Mental Disorder, 5th Edition (DSM-5) refers to postpartum depression as a major depressive disorder with a peripartum or postpartum onset.[11,12,16] By definition, PPD symptoms occur after pregnancy, up to one year beyond delivery. However, symptoms of depression are often apparent during the pregnancy.[2] This suggests that diagnoses of depression that originate during pregnancy should be considered when identifying pregnancy-related depression rather than only depression diagnoses that occur after delivery.

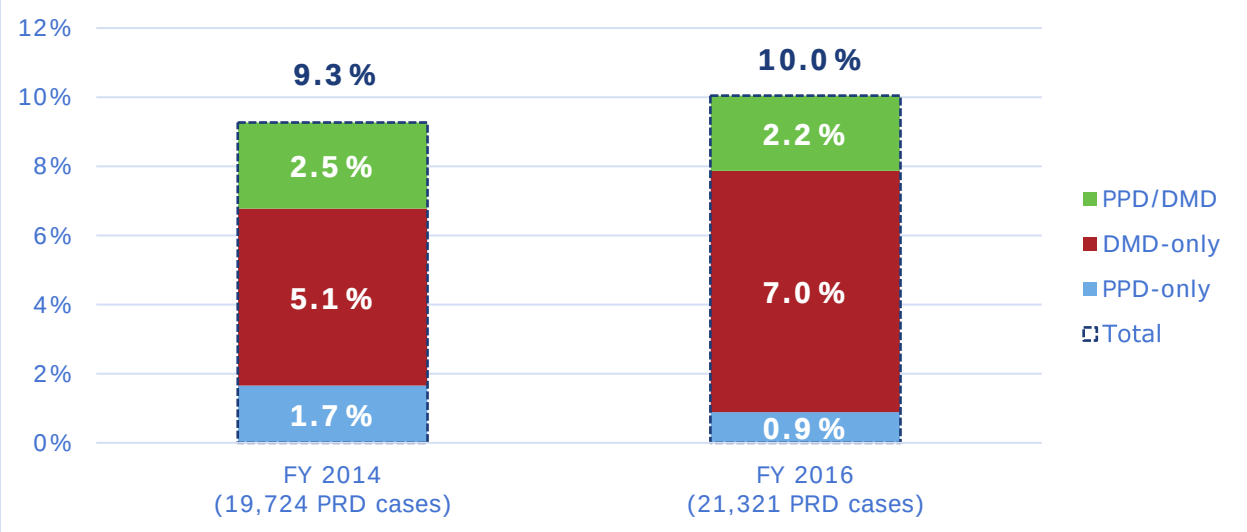
This report follows the approach used for the 2016 Rider 54 report to differentiate PPD and DMD occurring during pregnancy and throughout the postpartum period among women with a delivery paid for by Medicaid, CHIP, or both (referred to in this report as a Medicaid-paid delivery). However, the study period for the present analysis includes U.S. health care industry's transition from the use of the International Classification of Disease (ICD) diagnosis codes ninth revision (ICD-9-CM) to the tenth revision (ICD-10-CM)[i] for documenting patient conditions and treatments. ICD-10-CM codes include more diagnoses and contain details that capture clinical conditions with greater specificity. In order to replicate the method

[i] Transition occurred on October 1, 2015

used in the Rider 54 report, we converted the ICD-9-CM diagnosis codes that were used in the Rider 54 definitions of PPD and DMD to ICD-10-CM codes.[ii] There are several instances where the conversion does not result in a 1-to-1 match between the code sets. In some cases, the ICD-9-CM codes that comprised our definition of PPD in Rider 54 were mapped to ICD-10-CM codes that could describe either PPD or DMD (see Appendix B for more detail).

Figure 2 shows the distribution of PPD and DMD diagnoses in fiscal year 2014 compared to fiscal year 2016. While the prevalence of PPD and DMD combined during and after pregnancy was similar using the two code sets (see Appendix A for the lists of codes), the distribution of diagnosis type (PPD vs DMD) differed. Fewer women who were diagnosed with depression were diagnosed using codes considered to be PPD following the transition to ICD-10-CM. This is a result of ICD-10-CM detailing when symptoms occurred, compared to ICD-9-CM, enabling providers to more clearly specify the timing and nature of the diagnosis.

Figure 2. Distribution of pregnancy-related depression categories among women with Medicaid-paid deliveries in FY 2014 and FY 2016



Notes:

Depression categories in FY 2014 were defined using ICD-9-CM codes. Categories in FY 2016 were defined using a combination of ICD-9-CM and ICD-10-CM codes (refer to Appendix A). Data from Local Mental Health Authorities were categorized as DMD based on diagnosis code descriptions.

The FY 2016 total differs from the sum total due to rounding.

Women that have more than one delivery during the year are counted only once.

Excludes women with missing county information.

Source: Center for Analytics and Decision Support, Texas Health and Human Services Commission

[ii] Diagnosis codes were converted from ICD-9-CM to ICD-10-CM codes using a crosswalk available from the Centers for Medicare and Medicaid Services. Retrieved from https://www.cms.gov/Medicare/Coding/ICD10/2018-ICD-10-CM-and-GEMs.html
Accessed 12/13/2017.

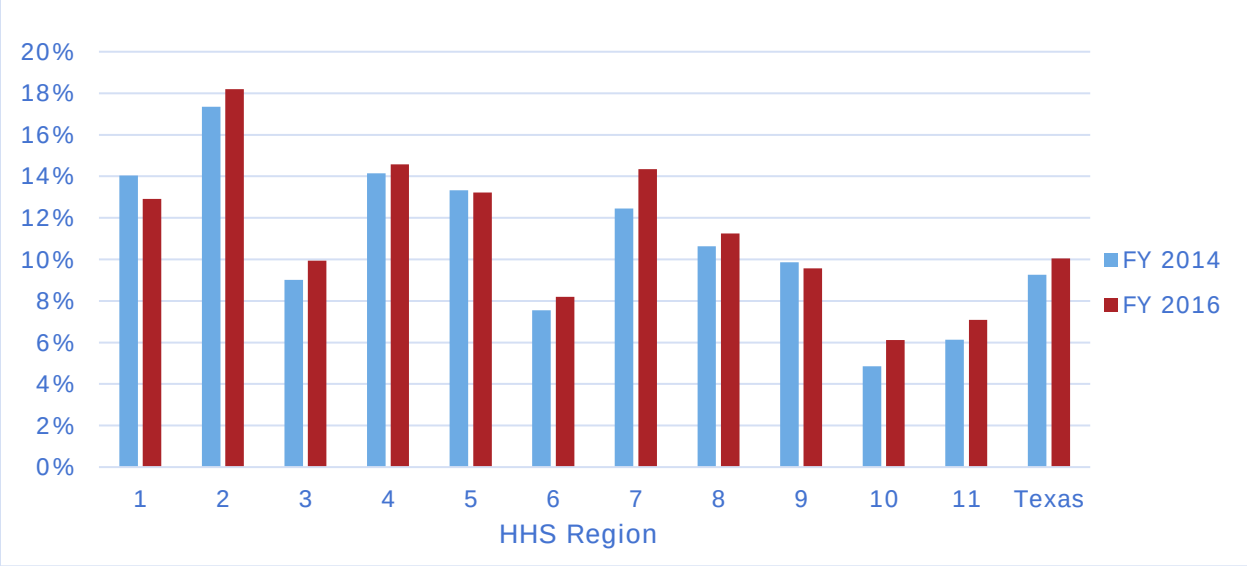
Because of these changes, this report examined the outcome of interest as a combined PPD-DMD diagnosis category referred to as “pregnancy-related depression” or PRD. This accounts for differences due to the ICD-9-CM to ICD-10-CM conversion and also better reflects that PPD symptoms can occur prior to delivery. Acknowledging this continuum, we report PRD statistics by time frame, with categories including: before pregnancy, during pregnancy, and after delivery. This approach allows us to examine differences in identification, service utilization, and treatment during each of these time periods.

3. Diagnosis, Screening and Treatment of PRD Among Women with a Medicaid-Paid Delivery

3.1 Frequency of Pregnancy-Related Depression Diagnoses

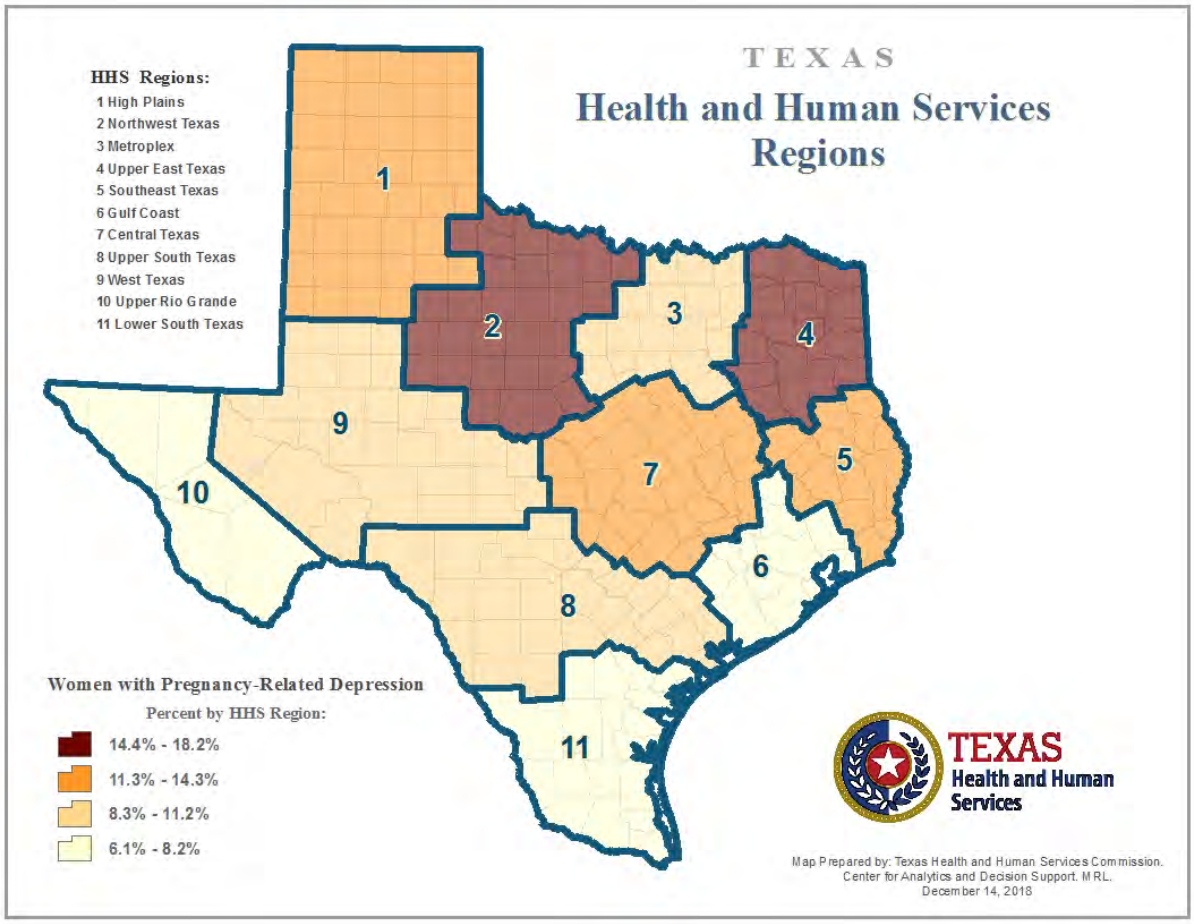
Over 9 percent of women with a Medicaid-paid delivery in fiscal year 2014 identified in claims and encounter data as having a diagnosis of PPD and/or DMD (collectively referred to as PRD in this report). In fiscal year 2016, 10 percent of women with a Medicaid-paid delivery were diagnosed with PRD. The distribution of diagnosed PRD varied widely by HHS Region in both fiscal year 2014 and fiscal year 2016. However, the annual rates of PRD by region were highly concordant (Figure 3). PRD diagnoses tended to be reported at relatively lower rates within the border regions (Regions 10 and 11) as well as larger urban areas (Regions 3 and 6). The northern panhandle regions (Regions 1 and 2) and northeast Texas (Regions 4 and 5) exhibited the highest rates of PRD (Figures 3 and 4).

Figure 3. Percent of women with Medicaid-paid deliveries having pregnancy-related depression by HHS Region, FY 2014 and FY 2016



Notes:
Depression categories in FY 2014 were defined using ICD-9-CM codes. Categories in FY 2016 were defined using a combination of ICD-9-CM and ICD-10-CM codes (refer to Appendix A).
Women that have more than one delivery during the year are counted only once.
Excludes women with missing county information.
Source: Center for Analytics and Decision Support, Texas Health and Human Services Commission and BHS Office of Decision Support, Texas Health and Human Services Commission

Figure 4. Percentage of women with Medicaid-paid deliveries diagnosed with pregnancy-related depression by HHS Region, FY 2016



3.2 Pregnancy-Related Depression Screening and Identification

Multiple procedure codes are available to indicate screening for depression but are infrequently billed on Texas Medicaid claims. These data do not capture screenings that occur during office visits when the provider does not separately bill for the screening. Out of 21,321 women with a PRD diagnosis, only about one-third (6,371 women) had a procedure code indicating a depression screening during or after pregnancy. Table 1 shows the timing of the first behavioral assessment among women who received psychiatric diagnostic evaluation or screening for depression. Approximately half (51.2 percent) of women covered by Medicaid for Pregnant Women (MPW) whose providers billed for PRD screening were first assessed after the delivery of their infant. The timing of first assessments differs by procedure

code, but may be influenced by a combination of clinician practice and changes in Medicaid policy rather than by meaningful differences in the types of services that these codes represent. For instance, procedure code 99420 (administration and interpretation of health risk assessment instrument) was added as a benefit with reimbursement on November 1, 2015, but was replaced by 96160 and 96161 effective 01/01/2017. ICD-9-CM diagnosis code V79.0 (screening for depression) was discontinued after October 1, 2015.

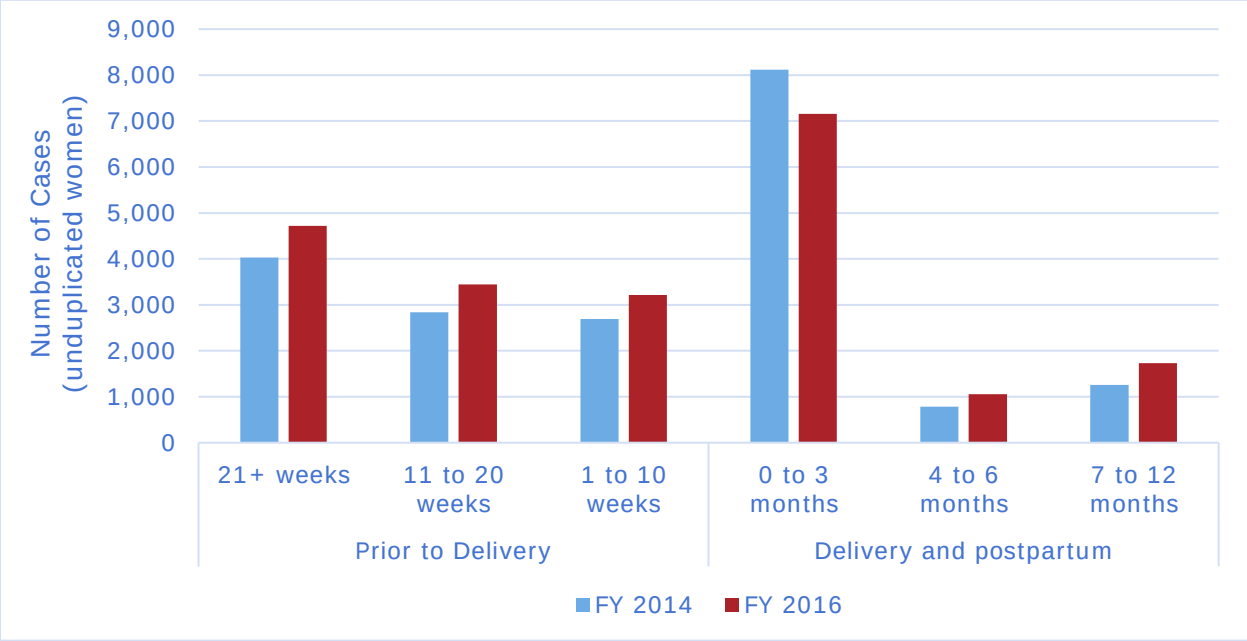
While our information on PRD screening is limited, we can approximate when PRD was identified among women with Medicaid-paid deliveries by examining when a PRD diagnosis was first recorded on a claim or encounter. In fiscal year 2016, over half of the PRD cases among women with Medicaid-paid deliveries were identified before delivery. The majority of postpartum diagnoses occurred within three months after delivery (Figure 5). However, the decline in diagnoses after three months is likely due to the length of a woman's Medicaid eligibility period following the end of her pregnancy. The MPW coverage period ends on the last day of the month 60 days after the pregnancy ends. The overall pattern of when PRD was identified is similar for both fiscal year 2014 and 2016, though there are limitations in interpreting trend data due to the change in methods for identifying PRD. With the beginning of auto-enrollment of eligible women into the Healthy Texas Women (HTW) program in July 2016, we expect to see greater numbers of PRD identified beyond three months postpartum.

Table 1. Timing of first psychiatric diagnostic evaluation or screening for depression among women with a Medicaid-paid delivery[a] in FY 2016 by procedure code

Procedure Code[b]	Procedure Code Description	Prior to Pregnancy		Prior to Delivery		Delivery & Postpartum		Total
90791	Psychiatric diagnostic evaluation	268	7.7%	1,474	42.3%	1,745	50.0%	3,487
90792	Psychiatric diagnostic evaluation with medical services	148	10.9%	507	37.2%	707	51.9%	1,362
96101	Psychological testing with interpretation and report by psychologist or physician per hour	14	13.6%	26	25.2%	63	61.2%	103
99420	Administration and interpretation of health risk assessment instrument	9	1.7%	82	15.6%	435	82.7%	526
G0444	Annual depression screening, 15 minutes	2	1.7%	37	31.6%	78	66.7%	117
Multi[c]	Indicates that two different codes were billed on the same day	26	9.1%	116	40.7%	143	50.2%	285
Other[d]	Includes the following CPT and HCPCS codes: 96127, 96102 and 96103, G8432, G8433, 1220F	9	5.5%	73	44.5%	82	50.0%	164
ICD-9-CM V79.0	Screening for depression	44	13.5%	277	84.7%	6	1.8%	327
Total		520	8.2%	2,592	40.7%	3,259	51.2%	6,371

[a] Excludes women who had more than one delivery during FY 2016 (n=38)
[b] See Appendix C for descriptions of procedure codes.
[c] Indicates that two different codes were billed on the same day (and that it was the first mention of screening)
[d] Includes the following CPT and HCPCS codes: 96127 (Brief emotional/behavioral assessment), 96102 and 96103 (Psychological testing), G8432 (Clinical Depression screening, not documented, reason not given), G8433 (Screening for clinical depression, not documented, patient not eligible), 1220F (Patient screened for depression, SUD)

Figure 5. Number of pregnancy-related depression cases identified before and after delivery in FY 2014 and 2016



Notes:
Depression categories in FY 2014 were defined using ICD-9-CM codes. Categories in FY 2016 were defined using a combination of ICD-9-CM and ICD-10-CM codes (refer to Appendix A).
Women that had more than one delivery during the year were counted only once. The timing of PRD occurrence is based on the date of the first delivery relative to their earliest PRD diagnosis.
Excludes women with missing county information.
Source: Center for Analytics and Decision Support, Texas Health and Human Services Commission

3.3 Utilization of Services and Onset of Treatment for Pregnancy-Related Depression

Clinical Services

We examined the frequency and timing of physician office visits for women enrolled in Medicaid or HTW who had a single Medicaid-paid delivery in fiscal year 2016. Out of 7,269 women with an office visit to a physician or other non-institutional Medicaid provider for PRD, almost half (48.3 percent) had at least one visit prior to delivery. Of those 3,510 women, 1,242, or 17.1 percent of the total number of women, also had at least one visit after delivery. The higher median number of visits among women who were seen both during pregnancy and after delivery (six visits) compared to the median number of visits for those seen only during pregnancy or only after delivery (one visit for each) is due, in part, to the longer length of time these women were enrolled in Medicaid. Further, it is likely that

among these women, persistent PRD issues throughout pregnancy and after delivery would lead to more frequent utilization of behavioral health services.

Table 2. Number and percent of women with a Medicaid-paid delivery[a] in FY 2016 who had one or more physician office visits for PRD[b], by timing of visits

Treatment Period	Number of women with PRD visits	%	Number of women with 1 office visit	Number of women with 2 office visits	Number of women with ≥3 office visits	Median Number of visits
During Pregnancy only[c]	2,268	31.2%	1,153	446	669	1
During Pregnancy and After Delivery	1,242	17.1%	0	154	1,088	6
After Delivery only[d]	3,759	51.7%	2,103	647	1,009	1
Total	**7,269**		**3,256**	**1,247**	**2,766**	**2**

[a] Excludes women with more than one delivery during FY 2016 (n=404)
[b] PRD visits were identified using the primary diagnosis code, date of service and place of service code listed on a claim or encounter for professional services. Office visits included claims and encounters with the following places of service: office, Federally Qualified Health Center, independent clinic and rural health clinic. Visits with PRD as the primary diagnosis (defined using ICD-9-CM and ICD-10-CM codes listed in Appendix A) are included.
[c] During Pregnancy = 220 days before the delivery date up to (and including) delivery date
[d] After Delivery = Delivery date to 365 days following delivery date
Source: Center for Analytics and Decision Support, Texas Health and Human Services Commission

Local Mental Health Authority Utilization

If a Medicaid provider is unable to deliver necessary follow up care, patients can be referred to local behavioral healthcare providers. Although local mental health authorities (LMHAs) are also Medicaid providers, as community mental health centers they also provide affordable mental health services to indigent adults and youth. Individuals seeking mental health services are initially assessed to identify their needs and strengths and then are authorized into a level of care (LOC) that meets their needs and preferences. Services are provided in one of several LOCs and include, but are not limited to: psychiatric diagnostic evaluations; pharmacological management, training and support; skills training and education; case management; supportive housing and supported employment; peer services (including family partners); crisis intervention; counseling services; and rehabilitative services. For women with severe PPD, LMHAs can provide more intensive psychiatric treatment. Women with a Medicaid-paid delivery may have

accessed these services while covered by Medicaid, but could also have done so before or after their Medicaid coverage period.

LMHA utilization follows a pattern similar to overall utilization of physician office visit utilization. Out of the 2,938 women with a Medicaid-paid delivery who accessed LMHA services for PRD during or after their pregnancy, 45 percent (1,231 women) had at least one service day prior to delivery. Those who accessed LMHA services during pregnancy and after delivery had a much higher average number of service days -- 19 compared to four for during pregnancy only and seven for after delivery only (Table 3).

Table 3. Utilization of LMHA services for PRD[a] among women with a Medicaid-paid delivery

Treatment Period	Number of women	Percent	Total Number of Service Days	Average Number of Service Days
During Pregnancy Only[b]	477	16.2%	1,860	4
During Pregnancy and After Delivery	844	28.7%	16,398	19
After Delivery Only[c]	1,617	55.0%	10,787	7
Total	**2,938**		**29,045**	**10**

[a] Identified based on diagnosis code descriptions
[b] During Pregnancy = 220 days before the delivery date up to (and including) delivery date
[c] After Delivery = Delivery date to 365 days following delivery date
Source: BHS Office of Decision Support, Texas Health and Human Services Commission

Vendor Drug/Pharmacy Services

The decision to use antidepressants as part of a treatment for PRD is made jointly by a physician and patient. This decision is driven by factors such as the severity of symptoms, patient preferences, potential impact on the fetus or infant, past response to treatment, and the availability of local mental health resources such as counseling.

We examined antidepressant use among women enrolled in Medicaid or HTW who had a single Medicaid-paid delivery during fiscal year 2016. Ten percent (20,777 women) were diagnosed with PRD. It should be noted that this number is slightly different from other portions of the report as mothers with more than one Medicaid-paid delivery were excluded from this calculation to more accurately identify timing of antidepressant use. Almost half (48.6 percent, or 10,091) of these women filled

at least one prescription for antidepressants. While most women with a prescription for antidepressants had a PRD diagnosis, 7,082 (41.2 percent) of the 17,173 women with an antidepressant prescription did not have a claim or encounter with a PRD diagnosis code (Table 4). Out of those 7,082 women, 313 were diagnosed either earlier than a year before the delivery date or later than a year following the delivery date (not shown). Another 3,266 women out of the same group of 7,082 were prescribed an antidepressant for another mental health condition such as postpartum psychosis or generalized anxiety disorder rather than PRD.

Table 4. Concordance between having a diagnosis of PRD and a filled prescription for antidepressants among women with a Medicaid-paid delivery[a] in FY 2016

PRD Diagnosis[b,c]	Antidepressant Prescription[d]					
	Yes		No		Total	
Yes	10,091	48.6%	10,686	51.4%	20,777	**100.0**
No	7,082	3.7%	184,026	96.3%	191,108	**100.0**
Total	**17,173**	**8.1%**	**194,712**	**91.9%**	**211,885**	**100.0**

[a] Excludes women with more than one delivery during FY 2016 (n=404)
[b] Identified using ICD-9 and ICD-10 codes listed in Appendix A
[c] Includes women who were diagnosed between 220 days before the delivery date to 365 days after the delivery date
[d] Identified using AHFS code 28:16:04 (CNS: Psychotherapeutic: Antidepressants)
Source: Center for Analytics and Decision Support, Texas Health and Human Services Commission

Almost half (48.3 percent) of women with PRD who were treated with antidepressants began treatment prior to delivery (Table 5). However, the interpretation of Table 5 is limited by the possible exclusion of information on antidepressant treatment before pregnancy, since not all women identified with PRD and prescribed antidepressants were enrolled in Medicaid for the entire year before delivery.

Table 5. Onset of antidepressant use among women with a Medicaid-paid delivery in FY 2016 by PRD diagnosis

Onset of Antidepressant Treatment	PRD Diagnosis		No PRD Diagnosis	
Before Pregnancy[a]	1,642	16.3%	946	13.4%
During Pregnancy[b]	3,226	32.0%	1,329	18.8%
After Delivery[c]	5,223	51.8%	4,807	67.9%
Total	10,091		7,082	

[a] Before Pregnancy = 365 to 221 days before the delivery date
[b] During Pregnancy = 220 days before the delivery date up to (and including) delivery date
[c] After Delivery = Delivery date to 365 days following delivery date
Source: Center for Analytics and Decision Support, Texas Health and Human Services Commission

We also examined the rates of antidepressant use before, during and after pregnancy by calculating the number of prescriptions filled per 1,000 member months. The rates of antidepressant use during pregnancy declined considerably from the pre-pregnancy rates, which is consistent with previous research indicating a tendency to avoid drug treatments prior to delivery. For women with a PRD diagnosis, the rate decreased about 69 percent, from 240.7 prescriptions filled per 1,000 member months enrolled before pregnancy to 74.3 during pregnancy. For women without a PRD diagnosis, the rate decreased about 86 percent, from 22.2 prescriptions filled per 1,000 member months enrolled to 3.2 (Table 6).

After delivery, the rate of prescriptions filled increased to approximately 85 percent of the pre-pregnancy rate for women with a PRD diagnosis. Based on previous research, this is likely due to women avoiding potential complications to the newborn from antidepressant use while nursing. For women without a PRD diagnosis, there was a 29 percent decrease in rate from before pregnancy (22.2 prescriptions filled per 1,000 member months enrolled) to after delivery (15.8 prescriptions filled per 1,000 member months enrolled) (Table 6).

Table 6: Number and rate of antidepressant prescriptions filled per 1,000 months enrolled among women with a Medicaid-paid delivery in FY 2016 by PRD diagnosis

Onset of Antidepressant Treatment	PRD Diagnosis			No PRD Diagnosis		
	Number of Prescription Fills	Number of Months Enrolled	Rate	Number of Prescription Fills	Number of Months Enrolled	Rate
Before Pregnancy[a]	4,110	17,074	240.7	1,653	74,518	22.2
During Pregnancy[b]	10,026	134,932	74.3	2,869	897,611	3.2
After Delivery[c]	24,158	117,438	205.7	9,909	625,798	15.8

[a] Before Pregnancy = 365 to 221 days before the delivery date

[b] During Pregnancy = 220 days before the delivery date up to (and including) delivery date

[c] After Delivery = Delivery date to 365 days following delivery date

Source: Center for Analytics and Decision Support, Texas Health and Human Services Commission

3.4 Medicaid Costs of Pregnancy-Related Depression

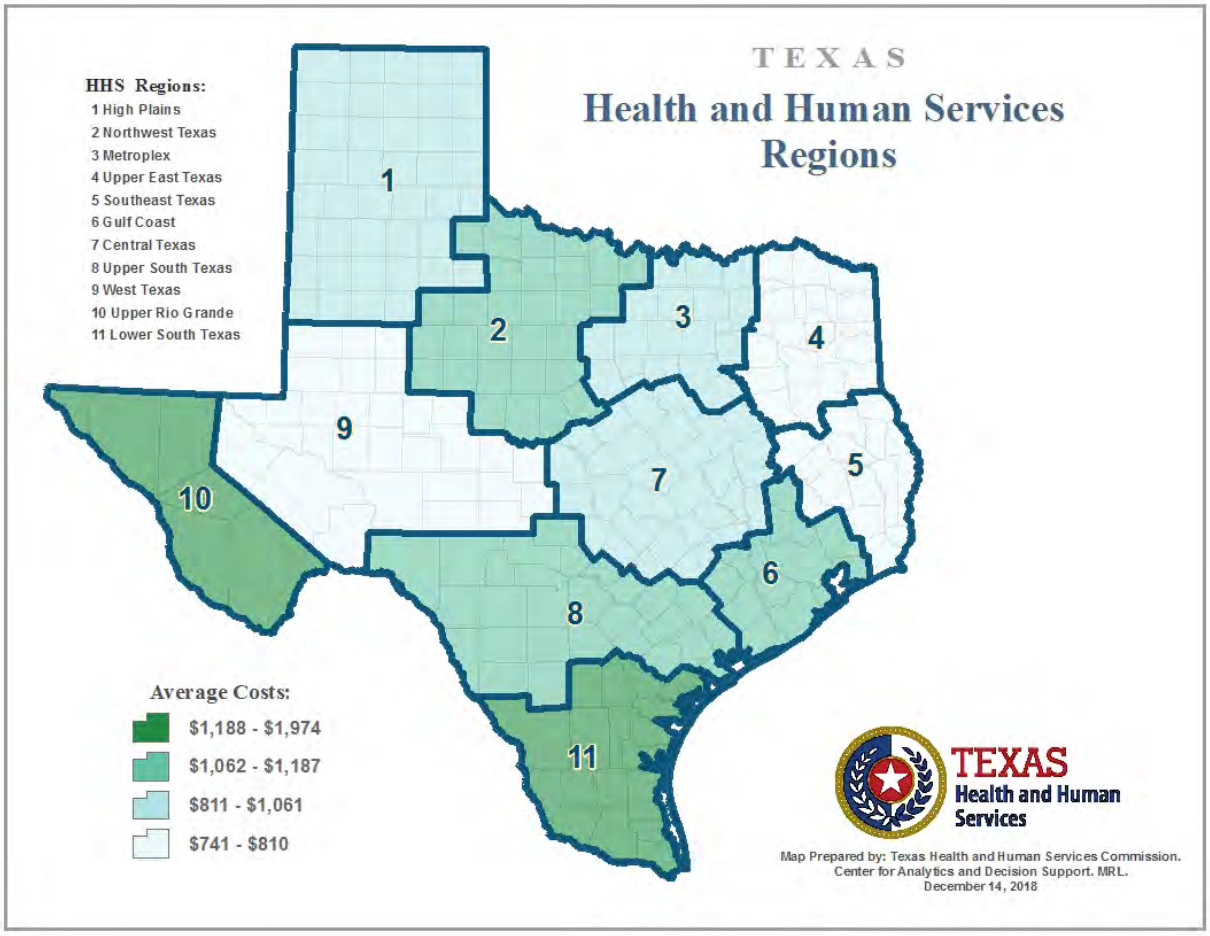
Over $12 million (All Funds) were spent annually by Medicaid for depression related clinical and prescription drug services during pregnancy and the woman's postpartum period (includes up to one year after delivery). Average statewide per capita costs were $1,014 for acute care services and $71 for filled prescriptions (Table 7). Average regional per capita costs varied with the highest costs in far west Texas (Region 10) and the lower Rio Grande valley (Region 11) and the lowest costs in east Texas (Regions 4 and 5) (Figure 6).

Table 7. Per capita Medicaid costs for pregnancy-related depression, by HHS Region, FY 2016

Region	Acute Care[a]			Drug[b]		
	Total costs	Unduplicated Client Count	Cost per client	Total costs	Unduplicated Client Count	Cost per client
1	$431,522	488	$884	$44,326	527	$84
2	$454,564	441	$1,030	$35,412	411	$86
3	$2,153,923	2,605	$826	$148,694	2,489	$59
4	$514,939	752	$684	$44,945	788	$57
5	$341,683	481	$710	$27,499	461	$59
6	$2,559,134	2,344	$1,091	$168,119	2,045	$82
7	$1,440,998	1,452	$992	$98,697	1,424	$69
8	$1,674,150	1,502	$1,114	$98,276	1,342	$73
9	$191,525	254	$754	$16,379	292	$56
10	$589,127	309	$1,906	$16,033	235	$68
11	$1,718,823	1,274	$1,349	$89,896	1,015	$88
Total	$12,070,388	11,902	$1,014	$788,276	11,029	$71

[a] Acute care costs are based on PRD-related visits which are defined using the primary DX field only.
[b] Antidepressants were identified using AHFS code 28:16:04 (CNS: Psychotherapeutic: Antidepressants).
Source: Center for Analytics and Decision Support, Texas Health and Human Services Commission

Figure 6. Per capita Medicaid costs for pregnancy-related depression, by HHS Region, FY 2016



4. Current Pregnancy-Related Depression Initiatives

4.1 Healthy Texas Women

The MPW program covers women through the last day of the month 60 days after their pregnancy ends. In order to increase awareness, education, and continuity of care for women with PRD, HHSC launched several initiatives in 2016. One of these initiatives was that, as of July 1, 2016, eligible women whose MPW coverage ends are automatically enrolled in the Healthy Texas Women (HTW) program. The HTW program provides family planning services and other women's health services that contribute to preconception care and better birth outcomes, including screening and pharmaceutical treatment for postpartum depression. Auto-enrollment allows women to continue to receive screening and pharmaceutical treatment for postpartum depression after MPW benefits have been terminated. The HTW auto-enrollment process closes the gap in coverage for many vulnerable women and preserves their access to necessary services.

In fiscal year 2016, prior to this policy change, fewer than 20 percent of women who were enrolled in MPW at the time of delivery had uninterrupted coverage beyond 3 months after delivery. Following the policy change, the number and percent of women with uninterrupted health care coverage more than doubled to approximately 45 percent. An analysis of enrollment data for MPW clients who delivered an infant in fiscal year 2016 is shown in Table 8. There were approximately 12,500 deliveries per month among women who were enrolled in MPW (column 2). The expected dis-enrollment month is two months after the delivery date, however this can vary depending on how close the actual delivery date was to the due date (column 3). The effect of the policy can be first seen among women who delivered in May of 2016. While more than half were dis-enrolled by the third month post-delivery (column 4 and 5), 22.6 percent were enrolled in HTW (column 6 and 7). The remainder stayed in MPW or enrolled in other Medicaid programs (columns 8 through 11).

Table 8. Medicaid enrollment categories in third month post-delivery[a] for women enrolled in Medicaid for Pregnant Women (MPW) with a delivery in FY 2016

Delivery Month (Column 1)	Number of MPW deliveries (Column 2)	Expected dis-enrollment month (Column 3)	No longer enrolled in third month post-delivery[a,b] (Columns 4 & 5)		Enrollment category in third month post-delivery[a]					
					Enrolled in Healthy Texas Women (Columns 6 & 7)		Stayed in MPW (Columns 8 & 9)		Enrolled in other Medicaid Program (Columns 10 & 11)	
15-Sep	13,191	15-Nov	10,660	80.8%	238	1.8%	135	1.0%	2,158	16.4%
15-Oct	12,713	15-Dec	10,152	79.9%	291	2.3%	220	1.7%	2,050	16.1%
15-Nov	12,432	16-Jan	9,884	79.5%	232	1.9%	189	1.5%	2,127	17.1%
15-Dec	13,128	16-Feb	10,346	78.8%	255	1.9%	261	2.0%	2,266	17.3%
16-Jan	12,586	16-Mar	9,809	77.9%	272	2.2%	318	2.5%	2,187	17.4%
16-Feb	12,018	16-Apr	9,376	78.0%	223	1.9%	378	3.1%	2,041	17.0%
16-Mar	12,365	16-May	9,573	77.4%	284	2.3%	433	3.5%	2,075	16.8%
16-Apr	11,715	16-Jun	8,842	75.5%	509	4.3%	394	3.4%	1,970	16.8%
16-May	11,858	16-Jul	6,753	56.9%	2,676	22.6%	398	3.4%	2,031	17.1%
16-Jun	12,311	16-Aug	6,660	54.1%	3,213	26.1%	424	3.4%	2,014	16.4%
16-Jul	12,517	16-Sep	6,534	52.2%	3,557	28.4%	354	2.8%	2,072	16.6%
16-Aug	13,434	16-Oct	7,208	53.7%	3,642	27.1%	355	2.6%	2,229	16.6%

[a] Based on enrollment category 3 months after the delivery date. MPW expiration occurs 2 months after the projected due date.

[b] "No longer enrolled" was defined as clients whose ID was not found in the 8-month enrollment file beyond 3 months following the delivery date. Medicaid eligibility data for any given month are considered complete after eight months (allowing for all retroactivity to be included).

Source: Center for Analytics and Decision Support, Texas Health and Human Services Commission

4.2 Texas Health Steps

The Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) program, known in Texas as Texas Health Steps (THSteps), provides preventive health services for children from birth through 20 years of age who are enrolled in Medicaid. The American Academy of Pediatrics recommends the use of screenings as part of a well-child visit,[17] and the majority of pediatricians concur that screening for postpartum depression is in the scope of their practice.[18] Effective July, 1 2018, PPD screening can be performed in addition to a THSteps visit for an infant under the age of 1. This change in policy provides additional opportunities for PPD screening beyond what is covered through MPW. THSteps providers must discuss the screening results with the mother as well as the impact depression may have on the mother, family, and health of the infant.

Providers may receive a separate reimbursement in addition to the infant checkup or follow-up visit using the following procedure codes:

Table 9. Procedure Codes for Postpartum Depression Screening

Procedure Code	Description
S-G8431	Screening for depression is documented as being positive and a follow-up plan is documented
S-G8510	Screening for depression is documented as negative, a follow-up plan is not required

Source: Texas Medicaid Provider Procedures Manual - September 2018. Children's Services Handbook, Section 5.3.11.1.4

Screening and referral is not contingent upon the mother's Medicaid eligibility. When needed, referrals are made regardless of the funding source, including referral to local mental health authorities (LMHAs) and local behavioral health authorities (LBHAs). THSteps providers should refer the mother to a provider who can perform further evaluation and determine an appropriate course of treatment. Appropriate providers include, but are not limited to:

- Mental health clinicians;
- The mother's primary care provider;
- Obstetricians and gynecologists;
- Family physicians; and
- Community resources such as LMHAs.

5. Conclusion

Pregnancy-related depression (PRD), a depressive disorder continuum that can originate during pregnancy or diagnosed after delivery as PPD, appears to be significantly underreported among Medicaid clients when compared to state estimates from other sources such as PRAMS. Although PRD diagnosis was identified in claims and encounter data in 10 percent of all women with Medicaid-paid births in fiscal year 2016, this rate is about 31 percent lower than the Texas PRAMS Medicaid-paid estimate of 14.4 for 2014-2016 and about 22 percent lower than the national aggregated PRAMS estimate of 12.8 for all deliveries. This may be partially explained by differences in how depression is identified between Medicaid claims and encounters data versus PRAMS self-reported survey data.

Our findings also reflect how PRD symptoms are often apparent during pregnancy, not solely after delivery. Nearly half of the women with an office visit to a physician or other non-institutional Medicaid provider for PRD had at least one visit prior to delivery. Over one fourth of women who used LMHA services for PRD were treated during pregnancy and after delivery, and 16.2 percent were only treated during pregnancy. Additionally, about one-third of women with PRD who were treated with antidepressants began using them during their pregnancy highlighting the importance of screening and treatment of PRD both during pregnancy and after delivery.

The October 2016 HHSC report, “Postpartum Depression among Women Utilizing Texas Medicaid,” included recommendations to increase utilization of screening and treatment within the Medicaid program, to increase the treatment of postpartum depression provided by LMHAs, and to increase continuity of care.

One recommendation was to develop reimbursement strategies that incentivize screenings and treatment for PPD. Since then, HHSC has implemented policies to reimburse providers who conduct PPD screenings during THSteps (well-baby) visits.

Additionally, the 2016 report anticipated that the automatic enrollment of eligible women into the HTW program following the termination of MPW coverage (effective beginning July 1, 2016) would improve opportunities for women to be screened and treated for PPD. In fiscal year 2016, prior to this policy change, fewer than 20 percent of women who were enrolled in MPW at the time of delivery had uninterrupted coverage beyond three months after delivery. Following the policy

change, the number and percent of women with uninterrupted healthcare coverage increased. Approximately 45 percent of the women who delivered in May of 2016 extended their enrollment beyond three months by enrolling in HTW or qualifying for other Medicaid programs beginning August 2016 (Table 8).

With the beginning of auto-enrollment of eligible women into HTW program in July 2016, we expect to see greater numbers of PRD identified and critical services utilized beyond three months postpartum.

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List of Acronyms

AHFS	American Hospital Formulary Service
DSHS	Department of State Health Services
DMD	Diagnosed Mental Disorder
DRG	Diagnosis Related Group
DSM	Diagnostic and Statistical Manual of Mental Disorders
HHSC	Health and Human Services Commission
HTW	Healthy Texas Women
ICD-9-CM	International Classification of Disease, 9th revision, Clinical Modification
ICD-10-CM	International Classification of Disease, 10th revision, Clinical Modification
LMHA	Local Mental Health Authority
LOC	Level of Care
MPW	Medicaid for Pregnant Women
NDC	National Drug Code
PRD	Pregnancy-Related Depression
PPD	Postpartum Depression
PRAMS	Pregnancy Risk Assessment Monitoring System
SSRI	Selective Serotonin Reuptake Inhibitor

Appendix A. Diagnosis Codes for PPD and DMD

Table A.1. Obstetrics Codes (ICD-10) related to Depression and Mental Health

ICD-10	Diagnostic Description
O90.6	Postpartum mood disturbance
O99.340	Other mental disorders complicating pregnancy, unspecified trimester
O99.341	Other mental disorders complicating pregnancy, first trimester
O99.342	Other mental disorders complicating pregnancy, second trimester
O99.343	Other mental disorders complicating pregnancy, third trimester
O99.344	Other mental disorders complicating childbirth
O99.345	Other mental disorders complicating the puerperium

Table A.2. Obstetrics Codes (ICD-9) related to Depression and Mental Health

ICD-9-CM	Diagnostic Description
648.40	Mental disorders of mother, unspecified as to episode of care or not applicable
648.41	Mental disorders of mother, delivered, with or without mention of antepartum condition
648.42	Mental disorders of mother, delivered, with mention of postpartum complication
648.43	Mental disorders of mother, antepartum condition or complication
648.44	Mental disorders of mother, postpartum condition or complication

Table A.3. ICD-10-CM Codes for Other Diagnosed Mental Disorders (DMD) that may occur during or after pregnancy

ICD-10	Diagnostic Description
F31.30	Bipolar disorder, current episode depress, mild or moderate severity, unspecified
F31.31	Bipolar disorder, current episode depressed, mild
F31.32	Bipolar disorder, current episode depressed, moderate
F31.4	Bipolar disorder, current episode depress, severe, without psychotic features
F31.5	Bipolar disorder, current episode depress, severe, with psychotic features
F31.6x	Bipolar disorder, current episode mixed
F31.75	Bipolar disorder, in partial remission, most recent episode depress
F31.76	Bipolar disorder, in full remission, most recent episode depress
F31.77	Bipolar disorder, in partial remission, most recent episode mixed
F31.78	Bipolar disorder, in full remission, most recent episode mixed
F31.81	Bipolar II disorder
F31.9	Bipolar disorder, unspecified
F32.0	Major depressive disorder, single episode, mild
F32.1	Major depressive disorder, single episode, moderate
F32.2	Major depressive disorder, single episode, severe without psychotic features
F32.3	Major depressive disorder, single episode, severe with psychotic features
F32.4	Major depressive disorder, single episode, in partial remission
F32.5	Major depressive disorder, single episode, in full remission
F32.89	Other specified depressive episodes
F32.9	Major depressive disorder, single episode, unspecified
F33.0	Major depressive disorder, recurrent, mild
F33.1	Major depressive disorder, recurrent, moderate
F33.2	Major depressive disorder, recurrent severe without psychotic features
F33.3	Major depressive disorder, recurrent, severe with psychotic symptoms
F33.41	Major depressive disorder, recurrent, in partial remission
F33.42	Major depressive disorder, recurrent, in full remission
F33.9	Major depressive disorder, recurrent, unspecified
F34.1	Dysthymic disorder
F43.21	Adjustment disorder with depressed mood
F43.23	Adjustment disorder with mixed anxiety and depressed mood

Table A.3 (continued). ICD-9-CM Codes for Other Diagnosed Mental Disorders (DMD) that may occur during or after pregnancy

ICD-9	Diagnostic Description
296.50	Bipolar I disorder, most recent episode (or current) depressed, unspecified
296.51	Bipolar I disorder, most recent episode (or current) depressed, mild
296.52	Bipolar I disorder, most recent episode (or current) depressed, moderate
296.53	Bipolar I disorder, most recent episode (or current) depressed, severe, without mention of psychotic behavior
296.54	Bipolar I disorder, most recent episode (or current) depressed, severe, specified as with psychotic behavior
296.60	Bipolar I disorder, most recent episode (or current) mixed, unspecified
296.61	Bipolar I disorder, most recent episode (or current) mixed, mild
296.62	Bipolar I disorder, most recent episode (or current) mixed, moderate
296.63	Bipolar I disorder, most recent episode (or current) mixed, severe, without mention of psychotic behavior
296.64	Bipolar I disorder, most recent episode (or current) mixed, severe, specified as with psychotic behavior
296.55	Bipolar I disorder, most recent episode (or current) depressed, in partial or unspecified remission
296.56	Bipolar I disorder, most recent episode (or current) depressed, in full remission
296.65	Bipolar I disorder, most recent episode (or current) mixed, in partial or unspecified remission
296.66	Bipolar I disorder, most recent episode (or current) mixed, in full remission
296.89	Other bipolar disorders
296.7	Bipolar I disorder, most recent episode (or current) unspecified
296.21	Major depressive affective disorder, single episode, mild
296.22	Major depressive affective disorder, single episode, moderate
296.23	Major depressive affective disorder, single episode, severe, without mention of psychotic behavior
296.24	Major depressive affective disorder, single episode, severe, specified as with psychotic behavior
298.0	Depressive type psychosis
296.25	Major depressive affective disorder, single episode, in partial or unspecified remission
296.26	Major depressive affective disorder, single episode, in full remission
296.82	Atypical depressive disorder
296.20	Major depressive affective disorder, single episode, unspecified
311	Depressive disorder, not elsewhere classified
296.31	Major depressive affective disorder, recurrent episode, mild
296.32	Major depressive affective disorder, recurrent episode, moderate
296.33	Major depressive affective disorder, recurrent episode, severe, without mention of psychotic behavior
296.34	Major depressive affective disorder, recurrent episode, severe, specified as with psychotic behavior

Table A.3 (continued). ICD-9-CM Codes for Other Diagnosed Mental Disorders (DMD) that may occur during or after pregnancy

ICD-9	Diagnostic Description
296.35	Major depressive affective disorder, recurrent episode, in partial or unspecified remission
296.36	Major depressive affective disorder, recurrent episode, in full remission
296.30	Major depressive affective disorder, recurrent episode, unspecified
300.4	Dysthymic disorder
301.12	Chronic depressive personality disorder
309.0	Adjustment disorder with depressed mood
309.28	Adjustment disorder with mixed anxiety and depressed mood

Appendix B. Converting Diagnoses from ICD-9-CM to ICD-10-CM

Converting diagnoses from ICD-9-CM to ICD-10-CM often does not result in 1-to-1 replacements. For example, the ICD-9-CM code 648.41 is used for "Mental disorders of mother, delivered, with or without mention of antepartum condition." According to a CMS crosswalk[iii] this code converts to a range of ICD-10-CM codes, from O99.341 ("Other mental disorders complicating pregnancy, first trimester") to O99.344 ("Other mental disorders complicating childbirth").

The tables below show the number of claims and the distinct number of clients for a selection of diagnosis codes related to depression during pregnancy. Table B.1 lists ICD-9-CM codes that were used in the Rider 54 report to identify PPD and DMD from fiscal year 2014 claims and encounters. The diagnosis type and the mapped ICD-10-CM codes are included beside the counts.

Table B.1 Distinct Claim and Client Counts for PPD and obstetrics DMD diagnoses FY 2014

ICD-9-CM Diagnosis Code	Description	Diagnosis Type	Maps to ICD-10-CM codes:	2014 Claim Count	2014 PCN Count
648.40	Mental disorders of mother, unspecified as to episode of care or not applicable	PPD	O99.340	1,912	935
648.41	Mental disorders of mother, delivered, with or without mention of antepartum condition	PPD	O99.341-O99.344	8,512	6,615
648.42	Mental disorders of mother, delivered, with mention of postpartum complication	PPD	O90.6 and O99.345	435	363
648.43	Mental disorders of mother, antepartum condition or complication	DMD	O99.341-O99.343	23,454	7,643
648.44	Mental disorders of mother, postpartum condition or complication	PPD	O99.345	4,090	2,853
Total unduplicated				**38,313**	**14,823**

[iii] Centers for Medicare and Medicaid Services. 2018 ICD-10-CM and GEMS. Retrieved from https://www.cms.gov/Medicare/Coding/ICD10/2018-ICD-10-CM-and-GEMs.html

Table B1. Distinct Claim and Client Counts for PPD and obstetrics DMD diagnoses FY 2016

Diagnosis Code	Description	Diagnosis Type	Maps to ICD-9 codes:	2016 Claim Count	2016 PCN Count
648.40	Mental disorders of mother, unspecified as to episode of care or not applicable	PPD	-	604	224
648.41	Mental disorders of mother, delivered, with or without mention of antepartum condition	PPD	-	1,716	1,389
648.42	Mental disorders of mother, delivered, with mention of postpartum complication	PPD	-	54	48
648.43	Mental disorders of mother, antepartum condition or complication	DMD	-	10,140	3,900
648.44	Mental disorders of mother, postpartum condition or complication	PPD	-	522	386
O90.6	Postpartum mood disturbance	PPD	648.42	1,412	1,076
O99.340	Other mental disorders complicating pregnancy, unspecified trimester	DMD	648.40	1,890	786
O99.341	Other mental disorders complicating pregnancy, first trimester	DMD	648.41, 648.43	1,846	1,077
O99.342	Other mental disorders comp pregnancy, second trimester	DMD	648.41, 648.43	6,331	2,868
O99.343	Mental disorders of mother, delivered, with or without mention of antepartum condition	DMD	648.41, 648.43	12,331	4,651
O99.344	Other mental disorders complicating childbirth	PPD	648.41	5,383	4,327
O99.345	Other mental disorders complicating the puerperium	PPD	648.42, 648.44	1,623	1,230
Total unduplicated				**43,619**	**14,708**

Appendix C. Methods and Data Sources

Data Sources

The data for this analysis come from (1) Delivery Supplemental Payment (DSP) data files which contain the deliveries paid by Medicaid (STAR) and CHIP managed care; (2) Medicaid and CHIP claims and encounters datasets (paid for by other Medicaid or CHIP funds) which provide delivery, diagnostic, utilization and treatment information for new mothers; (3) BHS Office of Decision Support Mental Health data warehouse Local Mental Health Authority encounter data, and (4) Medicaid and CHIP enrollment records.

Identifying Medicaid-Paid Deliveries

The Medicaid and CHIP IDs of new mothers were obtained from DSP data for fiscal year 2016. There were 209,866 Medicaid IDs and 344 CHIP IDs. An additional 2,423 deliveries were identified using claims or encounters with applicable diagnosis-related group (DRG) codes. A total of 212,289 women had 212,693 deliveries paid by Medicaid, CHIP, or a combination of both. If a mother had two deliveries in fiscal year 2016 with less than nine months between them, the second delivery was removed from the final group.

These women with CHIP and Medicaid-paid deliveries were then matched to the claims and encounters records, as well as the MHSA mental health database files. For the resulting matched data records, information on acute care medical services and pharmacy use was obtained.

Identifying Pregnancy-Related Depression

In this report, postpartum depression (PPD) and diagnosed mental disorders (DMD) have been grouped together as a single PRD diagnosis category. Women with mental health conditions, including PRD, who are no longer eligible for Medicaid services (i.e., their two month postpartum eligibility has been completed) and who do not subsequently enroll in Healthy Texas Women were excluded in this analysis. However, women qualifying for other Medicaid services, including those automatically enrolled into the HTW program, were included in this analysis. See Appendix A for PRD diagnoses.

Identification of PRD is based on the presence of a valid diagnosis (see Appendix A) on any of the 25 diagnosis (DX) data fields; that is, a person is considered to have

the condition if any of the DX fields contains a PRD diagnosis. For acute care payments, identifying a visit as PRD-related is based on the primary DX field only.

Utilization Measures

Visits are defined as all services provided for the same patient, by the same provider, on the same date of service. Professional claims were identified using a claim type of “020” (professional), “030” (professional crossover), or “058” (Healthy Texas Women). Professional encounters were identified using an 837 transaction of "P" (professional). Antidepressants were identified using AHFS code 28:16:04 (CNS: Psychotherapeutic: Antidepressants).

PRAMS

The Pregnancy Risk Assessment Monitoring System (PRAMS) is a surveillance system designed to monitor maternal attitudes and behaviors before, during, and after pregnancy. Conducted in partnership with the Centers for Disease Control and Prevention (CDC) and the Texas Department of State Health Services (DSHS), Texas PRAMS is a population-based assessment that monitors the health and behaviors of new mothers in Texas.

Of the 2,428 mothers sampled in 2014, 1,240 completed the survey, representing a weighted response rate of 53 percent. Of the 2,471 mothers sampled in 2015, 1,322 completed a survey, representing a weighted response rate of 56 percent. Of the 3,497 mothers sampled in 2016, 1,849 completed a survey, representing a weighted response rate of 54.6 percent.

Women who are selected for PRAMS are contacted through the mail when their infants are approximately 60 to 180 days old. They receive a letter that introduces the PRAMS survey and encourages their participation. They are notified that they will be contacted through follow-up mailings that will include a copy of the PRAMS survey. Women who do not respond receive two subsequent mailings. Women who do not return the survey through the mail are moved into the telephone phase of data collection. Women are called and encouraged to complete the survey over the phone. The data collection via mail and phone ends approximately 100 days after the introductory letter that introduces the PRAMS survey and encourages their participation. The women who completed the survey are representative of all Texas residents who had a live birth in 2014-2016. The 2014-2016 PRAMS data sets were combined, and contained 4,411 women who completed the survey. Of those 4,411 women, 2,131 had their delivery paid by Medicaid (as reported on the birth

certificate). These 2,131 women who completed the survey represent 181,307 Texas residents on Medicaid who gave birth to a live infant in 2014, 197,007 Texas residents on Medicaid who gave birth to a live infant in 2015, and 185,399 Texas residents on Medicaid who gave birth to a live infant in 2016.

The PRAMS survey questions used by CDC from 2012 to 2015 to calculate postpartum depression rates are:

73. *Since your new baby was born*, how often have you felt down, depressed, or hopeless?

__ Always __ Often __ Sometimes __ Rarely __ Never

74. *Since your new baby was born*, how often have you had little interest or little pleasure in doing things?

__ Always __ Often __ Sometimes __ Rarely __ Never

The PRAMS survey questions used by CDC in 2016 to calculate postpartum depression rates are:

74. *Since your new baby was born*, how often have you felt down, depressed, or hopeless?

__ Always __ Often __ Sometimes __ Rarely __ Never

75. *Since your new baby was born*, how often have you had little interest or little pleasure in doing things you usually enjoyed?

__ Always __ Often __ Sometimes __ Rarely __ Never